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U. S. Department of Agriculture

Preserve for Reference

NET PRICE LIST

of

MUSHROOM SPAWN AND SUPPLIES



Effective June 1, 1920; subject to change without notice.

American Spore Culture Spawn—In brick or bottle form.—Produced from the original spores of the best varieties, gathered, germinated and propagated in pure culture under the famous French process acquired and exclusively controlled by the American Spawn Company, of St. Paul, Minn., positively the most vigorous and prolific spawn on the market. See prices below:

PRICE LIST REVISED JULY 10, 1920

QUANTITY	Bottle spawn per quart	Total	Brick spawn per brick	Total
1 by mail, postpaid	\$1.75	\$1.75	\$0.40	\$0.40
2 by mail, postpaid	1.50	3.00	.35	.70
5 by express, not prepaid.....	1.10	5.50	.22	1.10
10 by express, not prepaid.....	1.00	10.00	.21	2.10
25 express or freight, not prepaid..	.80	20.00	.20	5.00
50 express or freight, not prepaid..	.80	40.00	.18	9.00
100 express or freight, not prepaid..	.80	80.00	.16	16.00

GUARANTEE.

The American Spawn Company guarantees all its mushroom spawn to be Northern grown and based upon pure spore cultures, produced under the French process exclusively owned by it. This process has not been communicated to anyone not at present an official of the Company.

CAUTION.

Dealers and growers are therefore cautioned to accept with reserve the statements of parties claiming former connection with the American Spawn Company (when the old tissue culture method was still employed), or who resort to the unauthorized use of this Company's trademark, to similar names or to other devices, in conveying the impression that they have had access to or discovered this spore process.

To guard against mistakes, growers in ordering from their respective dealers, should plainly specify and insist on receiving Spore Culture Spawn produced in St. Paul, Minnesota, by the American Spawn Company, and accept no substitutes.

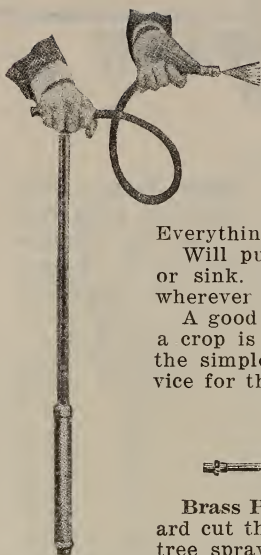
WHERE TO ORDER.

Our spore products are carried in stock by the leading seedsmen and dealers in the United States and Canada. If a grower cannot procure our spawn from his regular dealer, the order may be addressed to the American Spawn Company, St. Paul, Minn., and we will be pleased to fill it promptly or refer it for immediate shipment to a responsible dealer handling our products.

St. Paul, Minnesota

THE "KANT-KLOG" SPRAYER.

Junior No. 5.



We do away entirely with the objectionable foot-rest, clamps, leather suction, packing, etc. This pump requires no fastening of any kind, holds itself down and works anywhere and everywhere. All the operator need do is to press the plunger down. It rises of itself, the upward stroke being made by a brass spring forcing the cylinders apart.

The all brass suction, working with a brass cylinder with all Brass Valves, does away entirely with all leather, rubber, or other packing.

Everything except handle and hose is Solid Brass.

Will pump from a pail, barrel, trough, creek, spring, boat or sink. Without fastenings of any kind, it stands firmly wherever placed.

A good sprayer for whitewashing the mushroom house after a crop is indispensable to the mushroom grower, and this is the simplest, cheapest, and yet most effective device for that purpose on the market.

BRASS EXTENSION PIPE



Brass Pipe, 3 feet long, with quarter inch standard cut threads, needed for elevating the nozzle in tree spraying, whitewashing, etc. Several can be screwed together when desired. Price of pump, complete as shown in cut, with 3-foot extension pipe, by parcel post, prepaid.....\$1.50

THE B. M. I. IMPROVED MUSHROOM THERMOMETER

Size 14 Inches (including handle.)

For strength and durability, this thermometer is unexcelled. It has galvanized frame, black scale, wood handle and mercury bath. It is easily taken apart for cleaning purposes. It is specially designed to stand the wear and rough handling incident to hotbed or mushroom growing.

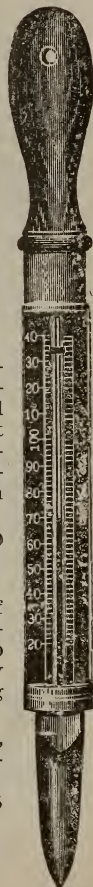
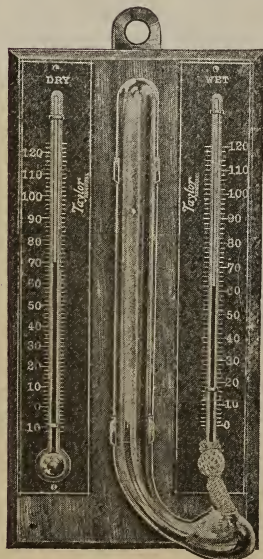
Price postpaid\$2.00

THE TYCOS HYGROMETER.

This pattern is of the Mason's form of Hygrometer. It depends on the difference in readings of the wet and dry bulb thermometers. Fan the bulb vigorously for a full minute or more before taking readings.

Mounted on oak board $8\frac{1}{2} \times 4\frac{1}{2}$ inches, black oxidized brass scales, etc. Complete with tables and directions.

Price postpaid\$2.75



We have discontinued the sale of the cheaper grade of Hygrometers of the indicating type, which need constant re-setting and are therefore unreliable.

MUSHROOM SPAWN

The tremendous possibilities opened to the mushroom industry, by the recent discovery of nature's own method of reproducing mushrooms through "spore germination," can hardly be overestimated. The application of this discovery in pure culture has been successfully accomplished by the American Spawn Company, of St. Paul, Minn. This Company was the originator and oldest manufacturer of "Lambert's Pure Culture Spawn" and its many improvements. It has again taken an important step forward and introduced spores, germinated in pure culture, in the manufacture of its mushroom spawn. The discovery of spore germination, and the acquisition and application of the process by the American Spawn Company to the manufacture of high-grade mushroom



BRICK SPAWN—A section of the drying sheds at the plant of the American Spawn Company, St. Paul, Minn.

spawn, both in brick and bottle form, suggest a brief review of the evolution of spawn making through its successive periods of improvement:

Mushroom Spawn.—Spawn, as the term is used commercially, includes the spawn proper, or mycelium, and its carrying medium, in brick, flake or other form, in which the mycelium is developed and preserved. In nature mushrooms of the *Agaricus* type are primarily reproduced by means of spores which drop from their gills at maturity. When germinated these spores produce the thread-like growth known as mycelium or spawn. In its further development, under certain conditions, the mycelium forms pin-heads and finally fully expanded mushrooms. Until very recently nature's method of germinating the spores of the mushroom had remained a profound secret.

Wild Spawn.—The wild or natural spawn, generally used by mushroom growers before the advent of pure culture spawn and known as English spawn, mill-track spawn, etc., consisted of mycelium found in old compost heaps and used in the inoculation of bricks or small beds of flake spawn.

Under this system, designated as "the chance method" by the Department of Agriculture, selection of varieties was impossible and the vigor or quality of the spawn depended on the more or less virgin conditions of the mycelium found, or its degree of remoteness from nature's original spore culture. Neither of these conditions could be ascertained until the crop appeared, and for commercial purposes it was then too late.

Tissue Culture Spawn.—The first important step in overcoming these uncertainties was made in the discovery of the "tissue culture" method which consists in growing mycelium from the tissue or flesh of the mushroom in a sterilized medium, and running the same into bricks of spawn, known as pure culture spawn. Through this method the selection of varieties became possible. It was found, however, that the tissue-culture grown mushroom, though suitable for market, is not desirable for reproduction by the same method, as each generation removes it from its spore origin with consequent loss in vigor and reduction in crop yield. Without the frequent intervention of spore-grown stock in the tissue cultures a gradual weakening of the spawn and the loss of varieties must inevitably result. This explains in a measure the apparent initial success and subsequent failure of a number of spawn makers who have attempted the manufacture of pure culture spawn. The American Spawn Company escaped this fate because it recognized from the start and took into proper account the limitations as well as the advantages of the tissue-culture method, and was able, because of favorable local conditions and sustained effort, to secure the spore stock necessary to maintain the strength of its cultures and to preserve its varieties.

It must not be inferred, however, that the proper spore stock is always available or procurable. In nature it is not easily found or identified, and it must undergo a series of tests before it can be relied upon. Moreover, industrial changes have further reduced the natural sources of supply and correspondingly increased the difficulties of the pure culture spawn-maker, who must face in the near future the dilution of his strains and consequent weakening of his spawn and the probable extinction of desirable varieties. The American Spawn Company who were pioneers in the development of Pure Culture Spawn, known as "Lambert's Pure Culture Spawn," and always on the alert for improvements were, of course, not blind to this situation. It is obvious that the only permanent remedy and safeguard were to be found in successful spore germination.

Spore Germination.—For a number of years attempts at spore germination have been made in this country, but more particularly in France where the production of mushrooms exceeds that of any other country in the world. Until recently these experiments have resulted in failure or partial failure. The problems to be solved involve, (1) the gathering of the spores in pure culture (aseptically), (2) the germination of the spores under sterile conditions, and (3) the successful development of the germinated spores into mycelium suitable for the manufacture of pure culture spawn. The first requisite was solved in various ways; the second was only partially solved, the methods devised giving only accidental or spasmodic results wholly unreliable for practical purposes; the third and most important requisite from the spawn-maker and mushroom grower's standpoint proved to be the most troublesome. It remained for a French scientist, after years of research and exhaustive tests, which we have closely followed, to devise a working process by which spores can be gathered, germinated and propagated in pure culture with absolute certainty, in a remarkably short time, and with uniform results. This is the valuable process we have acquired, and in the exclusive control of which we are fully protected. We emphasize this statement in order to put our customers on their guard against the statements of individuals who, from time to time, claim to have discovered a method of germinating spores and even of propagating the spores so germinated.

American Spore Culture Spawn.—By the acquisition and operation of this process the American Spawn Company has eliminated at one stroke all the elements of uncertainty in the manufacture to its spawn, and has taken

a most progressive, if not the final, step in spawn making, the introduction of germinated spores in its bricks, bottles and cultures. It is unnecessary to dwell at length upon the many points of advantage of spore culture spawn, they are well understood by experienced growers, and may be summarized as follows:

Vigor and prolificness, because derived direct from the spore without dilution of division.

True to type, because the spore process alone permits indefinite reproduction of desirable varieties.

Uniformity, because the degree of remoteness from the spore of different lots or strains is known and controlled, not left to uncertainty or to the caprice of nature.

Preservation of varieties; spores of desirable varieties may be safely stored away by the manufacturer and kept for future use, whereas the mycelium, the mushroom and tissue culture necessarily deteriorate very rapidly.

Stability; every element of uncertainty is eliminated, and all essential factors in the development of the cultures and the manufacture of the bricks is absolutely controlled.



TEST BEDS OF THE AMERICAN SPAWN COMPANY AT ST. PAUL.

Improvement of varieties; this field is unlimited since the spore process is the only unerring method of securing continuous reproduction.

Free from disease; this is most important, for it is well known that parasitic and saprophytic diseases of the mushroom, and their insect enemies, are often disastrous to the grower. The germination of spores in pure culture absolutely guards against contamination from any source.

Flake (or bottle) Spawn.—A demand has arisen in some quarters for spawn in loose or flake form, put up in quart bottles and grown in sterilized medium. In this form of spawn, like in the brick, the growing medium is also the carrying medium for the mycelium. When used intelligently by experienced growers with

all necessary precautions, this spawn has given in many cases quicker results than the brick. It must, however, be borne in mind that a loose medium does not furnish to the mycelium the degree of protection which is afforded in the close-grained brick. It is therefore more sensitive than the brick to injury, and is not so resistant to adverse conditions which may be found in the beds by reason of the grower's disregard of cultural requirements. For the accommodation of growers who may desire bottle spawn, we are manufacturing this product using our strong spore cultures for that purpose. It is therefore the best on the market.

Varieties.—Our leading varieties are No. 7 brown, No. 8 cream, and No. 9 white. The greatest demand is for the cream and white varieties. We can furnish special varieties upon seasonable notice.

Trade Mark.—The success achieved by our products has, from time to time, brought into the market some inferior grades of spawn which were attempted to be sold as "Pure Culture Spawn." We anticipate that the still greater success of our "spore culture spawn" will soon cause the appearance of a substitute sailing under a name suggesting a similar origin. For that reason all bricks of the genuine "American Spore Culture Spawn" and of "Lambert's Pure Culture Spawn" manufactured by this Company, are stamped with our trade mark, the letters PC enclosed in a diamond.



We would caution growers against close imitations of this trade mark, which have recently appeared, such as the letters PC enclosed in a circle, heart or square.

Storage.—It should be remembered by both seedsmen and growers that many failures may be attributed to the improper storage of spawn, for good spawn may be ruined in a relatively short period by carelessness in that respect. Spawn should be kept in a place that will be both cool and dry. The mycelium in the bricks when shipped is in a dormant stage. Moisture combined with a temperature much above 50 degrees F. will start a growth of the mycelium which must eventually die for lack of nutriment unless it is at once planted in a prepared bed. When properly stored, brick spawn will retain its vitality for at least one year. We guarantee all our spawn to be in prime condition when leaving our yards. We inspect every brick and ship none but the best.

Bricks, Bottles, Boxes, etc.—Each brick of "American Spore Culture Spawn," measures about 8 inches in length, 5 inches in width, and is about 1 inch thick. Our bricks weigh from 1 ¼ to 1 ½ pounds and are packed in strong boxes containing 100 bricks each. Formerly they contained 160 bricks each. Each case is stenciled and distinctly numbered, and by reference to this number the original culture and strain from which the spawn was produced can be traced in our records. We do not sell by weight. Half cases contain 50 bricks. Bottle spawn is put up in quart jars (sometimes in 2-quart jars). They are packed in boxes or barrels.

Eastern Depot.—For the accommodation of our Eastern trade we endeavor to keep a supply of our spawn on hand at Mendenhall, Pa., whence shipments (in case lots only) can be made promptly to Eastern points, thus saving transportation charges.

Reservations.—The importance of spawning the beds at the proper temperature cannot be too strongly impressed. The mycelium in the spawn demands a bed temperature of 75° F., or a little over, to get a start. A delay of a few days at this time, with resulting loss of temperature, means a poor "catch," a weak run and

a greatly reduced crop. The work of a season is partly wasted and the margin of profit is wiped out. It is therefore essential that a **supply of spawn be assured at the proper time.** Unfortunately many growers place their orders or reservations too late. They fail to take into account a possible shortage in the market supply, strikes, accidents or delays in transportation, prior reservations, etc., and expect immediate shipment on a rush order, to the exclusion of other advance orders seasonably placed with the dealer or manufacturer.

In the past this improvident policy on the part of some growers has resulted in disappointments and in serious losses due to the cooling of the beds before a supply of reliable spawn could be obtained. We are anxious to protect our regular customers against these contingencies, so that the risks of delay for any cause may fall only on the improvident growers. We have therefore arranged for our customers a plan of reservations which will guarantee to them prompt shipment at the specified time, in preference to all orders subsequently received, to the full extent of our available and prospective season's supply.

Reservations for our Spore Culture Spawn, in brick or bottle form, for future shipment will be accepted in the order of their receipt and **guaranteed to be shipped on specified dates,** provided the order is accompanied by one-half the price of the spawn and the balance is received at least five days prior to the date fixed for the shipment.

This plan, we believe, will give our regular customers an opportunity to fully protect themselves against a shortage or other causes of delay, and eliminate the element of chance from their business. In specifying dates of shipment, customers should set them early enough to guard against accidents or delays in transportation. In ordering, use blank form hereto attached.

VENTILATED MUSHROOM BOXES

Paraffined, with printed cooking recipes, printed guaranty as to safety, and grower's name and address—cut and ribbed, easily folded—shipped flat.

300 or less, 1-lb. oblong.....	\$ 5.00
500 or less, 1-lb. oblong.....	5.95
1000 or less, 1-lb. oblong.....	10.30
2000 or less, 1-lb. oblong.....	19.05
5000 or less, 1-lb. oblong.....	45.95
10000 or less, 1-lb. oblong.....	87.50

The time has passed when the mushroom grower could ship his mushrooms in any old package, cover it with a newspaper, tie it up with a string, and let it go at that. The public is now more exacting and discriminating. An attractive package will sell readily at a good price, while the unattractive basket will go begging and must be sold at a sacrifice.

The fresh mushroom is a very perishable article and will not stand rehandling or repacking without injury and serious loss in grade. If shipped in bulk it becomes a third-grade article when repacked. The demand has therefore gradually become imperative for a package which will safely carry the fresh mushroom from grower to consumer.

(Use this blank in ordering)

ORDER FOR IMMEDIATE SHIPMENT

AMERICAN SPAWN COMPANY,
604 Pioneer Bldg., St. Paul, Minn.

Please ship to me at once by.....at the address
given below, the following articles:

	Amount
.....bricks American Spore Culture Spawn, No.....
.....quarts American Spore Culture Spawn, No.....
.....Ventilated Mushroom Boxes with name and address printed as follows:	

.....
.....
.....Mushroom Thermometer, B M I.....

.....Hygrometer, Tycos.....

.....Kant-Klog Sprayer, Junior No. 5.....

Total amount enclosed as per net price list.....\$.....

My shipping address is:

Name.....

Street or R. F. D. No.....

Town and State.....

Post Office address (if different).....

ORDER FOR GUARANTEED RESERVATION

AMERICAN SPAWN COMPANY,
604 Pioneer Bldg., St. Paul, Minn.

Please reserve for me absolutely the following articles to be
shipped by.....not later than the dates specified below:

Date
of shipments

.....bricks Spore Culture Spawn,
variety No.....

.....quarts Spore Culture Spawn,
variety No.....

To secure guaranteed reservation, I enclose the sum of \$.....,
one-half the total amount of these shipments as per your net price
list, and will remit balance at least 5 days before date set for ship-
ment. Please advise me of your acceptance.

Name.....

Street address or R. F. D. No.....

Town and State.....

NOTE.--It is understood that if remittance of balance of pur-
chase price is not received prior to date specified for shipment, the
Company may, at its option, assign the reservation for a later date,
or make part shipment up to the amount covered by the first remit-
tance.